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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,976	12/29/2005	Masaki Murase	283133US6PCT	3533

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EXAMINER
LAM, VINH TANG

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
06/17/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/562,976	MURASE ET AL.	
	Examiner	Art Unit	
	VINH T. LAM	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 October 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims **1** to **4** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Masumori et al. (US Patent No. 5168270)** in view of **Nitta et al. (US Patent No. 6661402).**

Regarding Claim **1** (Currently Amended), **Masumori et al.** teach a flat display apparatus for successively receiving as its input gradation data representing brightness of pixels and for displaying an image based on the gradation data on a predetermined display portion, said flat display apparatus comprising:

a serial-parallel converter (i.e. **14_1** -**14_6**, Col. **5**, Ln. **40**-**46**, FIG. **2** and **14A**, Col. **5**, Ln. **51**-**57**, FIG. **6**) for sequentially and cyclically sampling the gradation data (i.e. **Da**, **Db**, **Aa**, and **Ab**, Col. **5**, Ln. **40**-**43**, FIG. **2**) to convert the sampled gradation data into gradation data of a plurality of systems (i.e. **even-number** and **odd-number** column lines, Col. **12**, Ln. **45**-**56**); and

a plurality of horizontal driving circuits (i.e. **13_1** -**13_S**, Col. **5**, Ln. **51**-**53**, FIGs. **2** & **6**) provided in correspondence to the gradation data of the plurality of systems for setting gradations for pixels of corresponding columns of said display portion in

correspondence to the gradation data of the corresponding plurality of systems (Col. **12**, Ln. **45**-**56**), wherein

each of said plurality of horizontal driving circuits has a plurality of sampling circuits (i.e. shift register **14B**, and holding circuit **14C**, Col. **5**, Ln. **51**-**64**, FIG. **6**) for successively sampling the gradation data of the corresponding one of the plurality of systems to distribute the gradation data of the corresponding plurality of systems to the corresponding columns (Col. **5**, Ln. **51**-**64**, FIG. **6**), and a digital to analog converter for setting levels of output signals to the corresponding columns based on the sampling results from said plurality of sampling circuits (Col. **12**, Ln. **59**-**68** and Col. **13**, Ln. **1**-**15**),

said serial-parallel converter outputs the gradation data of the plurality of systems to said corresponding plurality of horizontal driving circuits, respectively, at timing corresponding to the sequentially cyclic sampling (Col. **5**, Ln. **40**-**68**, FIG. **6**),

said plurality of horizontal driving circuits sample the gradation data of the corresponding plurality of systems in said plurality of sampling circuits, respectively, at timing corresponding to sequentially cyclic sampling in said serial-parallel converter (Col. **5**, Ln. **40**-**68**, FIG. **6**).

However, **Masumori et al.** do not teach that said serial-parallel converter has a data converter for enlarging an amplitude of the gradation data and for sampling sequentially and cyclically the resulting data to convert the resulting data into data of the plurality of systems.

In the same field of endeavor, **Nitta et al.** teach a data converter for enlarging an amplitude of the gradation data and for sampling sequentially and cyclically the resulting

data to convert the resulting data into data of the plurality of systems (Col. **11**, Ln. **23-30**, FIGs. **8 & 11**).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine **Masumori et al.** teaching of a flat display apparatus comprising a serial-parallel converter, a plurality of horizontal driving circuits, and a digital to analog converter sampling the gradation data correspondingly, sequentially, and cyclically with **Nitta et al.** teaching of a data converter for enlarging an amplitude of the gradation data in order to benefit of simplifying the structures and reducing power consumption by having a flat display apparatus comprising a serial-parallel converter, a plurality of horizontal driving circuits, and a digital to analog converter sampling the gradation data correspondingly, sequentially, and cyclically wherein serial-parallel converter has a data converter for enlarging an amplitude of the gradation data.

Regarding Claim **2** (Previously Presented), the flat display apparatus according to claim 1, wherein **Masumori et al.** teach said serial-parallel converter, said plurality of horizontal driving circuits of the plurality of systems, and a timing generator (i.e. control part **10**, Col. **5**, Ln. **40-43**, FIGs. **2** & **6**) for outputting timing signals as operational references to said serial-parallel converter and said plurality of horizontal driving circuits of the plurality of systems are formed on an insulating substrate of said display portion (Col. **5**, Ln. **51-68**, FIGs. **2** & **6**).

Regarding Claim **3** (Previously Presented), the flat display apparatus according to claim 1, wherein **Masumori et al.** teach the plurality of systems are systems corresponding to odd number columns and even number columns in said

display portion (Col. **12**, Ln. **45**-**56**), and said plurality of horizontal driving circuits are disposed on upper and lower sides of said display portion (i.e. obviously well-known in the art as Design Choice to divide a display into portions of top and bottom or left and right), respectively.

Regarding Claim **4** (Currently Amended), the flat display apparatus according to claim 1, wherein **Masumori et al.** teach said serial-parallel converter has a level shifting circuit (i.e. **dividing resistors**, Col. **15**, Ln. **40**-**43**, FIG. **11**) for reducing amplitudes of the data of the plurality of systems obtained by said data converter to output the gradation data of the plurality of systems (Col. **15**, Ln. **40**-**51**, FIG. **11**).

Response to Arguments/Amendments/Remarks

2. Applicant's arguments with respect to Claims **1**-**4** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kanoh; Hideki et al. (US Patent No. 6806859 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH T. LAM whose telephone number is (571)270-3704. The examiner can normally be reached on M-F (7:00-4:30) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 272-7674. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VTL/

/Amare Mengistu/
Supervisory Patent Examiner, Art Unit 2629